

Avian Models for 3D Applications
Characters and Procedural Maps by Ken Gilliland

Songbird ReMix

TOUCANS 2

Manual & Field Guide

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Songbird ReMix

TOUCANS 2

Manual & Field Guide

Introduction

Toucans are highly recognizable birds with their oversized beaks and bright colorations and are often associated with the parrot family, Africa and a cereal box. While a toucan does grace a cereal box, they're not parrots; they're actually closer relatives to the American Barbets and their homes are found in Central and South America. "Songbird ReMix Toucans2" journeys into the deep rainforests and ancient empires of Mesoamerica to bring to life many of the most interesting toucanets, aracarís and toucans found in the region.

Overview

The set is located within the **Animals : Songbird ReMix** folder. Here is where you will find a number of folders, such as **Bird Library**, **Manuals** and **Resources**. Let's look at what is contained in these folders:

- **Bird Library:** This folder holds the actual species and poses for the "premade" birds. Birds are placed into a "type" folder (such as "Birds of Prey (Order Falconiformes)" which for example would hold falcons, hawks and eagles). The birds for this set can be found in the following folder(s):
 - **Woodpeckers and Toucans (Order Piciformes)**
- **Manuals:** Contains a link to the online manual for the set.
- **Props:** Contains any props that might be included in the set
- **Resources:** Items in this folder are for creating and customizing your birds
 - **Bird Base Models:** This folder has the blank, untextured model(s) used in this set. These models are primarily for users who wish to experiment with poses or customize their own species of bird. With using physical renderers such as Iray and Superfly, SubD should be turned to at least "3".

Poser Use

Select **Figures** in the **Runtime** Folder and go to the **Animals : Songbird ReMix** folder. Select the bird from the renderer (*Firefly* or *Superfly*) folder you want and simply click it

to load. Some birds in the Songbird ReMix series may load with attached parts (*Conformers*) such as tail or crest extensions. Some of these parts have specific morphs. You will need to click on the attached part to access those controls. Associated poses can be found in the same folder- **Bird Library : (Type) : Poses**.

DAZ Studio Use

Go to the **Animals : Songbird ReMix** folder. Select the bird from the renderer (*3Delight* or *Iray*) folder you want and simply click it to load. Some birds in the Songbird ReMix series may load with attached parts (*Conformers*) such as tail or crest extensions. Some of these parts have specific morphs. You will need to click on the attached part to access those controls. Associated poses can be found in the same folder- **Bird Library : (Type) : Poses**. **Note:** Using the "Apply this Character to the currently selected Figure(s)" option **will not** properly apply the correct scaling to the bird selected. It is better to delete the existing character first and load the one you want to use.

Physical-based Rendering

Physical-based renderers such as **Iray** and **Superfly** require more CPU and memory horsepower than the legacy renderers for DAZ-Studio and Poser because of ray-trace bounces and higher resolution meshes needed for displacement. Superfly, in particular, may crash *especially* when using the GPU-based options. The best solution is to render using one of the CPU-based options. Limiting the number of ray-trace bounces by setting "Pixel Samples" to "2" or "1" will also reduce crashes and speed renders. Of course, upgrading memory and your CPU will also help.

Where to find your birds

Type Folder	Bird Species
Woodpeckers and Toucans (Order Piciformes)	Crimson-rumped Toucanet Golden-collared Toucanet Saffron Toucanet Spot-billed Toucanet Goulds Toucanet Tawny-tufted Toucanet Green Aracari Chestnut-eared Aracari Ivory-billed Aracari Curl-crested Aracai Red-necked Aracari Gray-breasted Mountain Toucan Hooded Mountain Toucan Choco Toucan Green-billed or Red-breasted Toucan Red-billed or White-throated Toucan

Songbird ReMix

TOUCANS 2

Field Guide

TOUCANETS

Crimson-rumped Toucanet
Golden-collared Toucanet
Saffron Toucanet
Spot-billed Toucanet
Gould's Toucanet
Tawny-tufted Toucanet

ARACARIS

Green Aracari
Chestnut-eared Aracari
Ivory-billed Aracari
Curl-crested Aracai
Red-necked Aracari

TOUCANS

Gray-breasted Mountain Toucan
Hooded Mountain Toucan
Choco Toucan
Green-billed or Red-breasted Toucan
Red-billed or White-throated Toucan

General Information about Toucans

From Wikipedia, the free encyclopedia (edited by Ken Gilliland)

Toucans are *near passerine birds* from the neotropics (Central and northern South America) and are most closely related to American barbets. They are brightly marked and have large, colorful bills. The family includes five genera and about forty different species. The name of this bird group is derived from the French "Tupi tucana".

Species

There are three types of toucan. The largest toucans generally have black feathers, with touches of white, yellow, and scarlet. Aracaris (smaller toucans) have yellow under parts, crossed by one or more black or red bands. The toucanets (smallest of the toucans) have mostly green plumage with blue markings.

Toucans range in size from the 130g Lettered Aracari (*Pteroglossus incriptus*) to the 680g Toco Toucan (*Ramphastos toco*). Their bodies are short and compact and comparable to the size and shape of a crow. The tail is rounded and varies in length, from half the length to the whole length of the body. The neck is very short and thick. The legs of a toucan are short and thick. Their toes are arranged in pairs with the first and fourth toes turned backward (Zygodactyl feet). The majority of toucans do not show any sexual dimorphism (male/female) in their coloration, the genus *Selenidera* being the most notable exception to this rule (hence their common name, "dichromatic toucanets"). The most noticeable difference in the sexes is the bills of female toucans are usually shorter, deeper and sometimes straighter than male bills.

The huge and usually colorful bill of the toucan, in some large species, measures more than half the length of the body. Despite its size, the bill is very light, being composed of bone struts with little solid material between them. The bill has forward-facing serrations resembling teeth, which historically led naturalists to believe that toucans captured fish and were primarily carnivorous. However, today we know that Toucans eat mostly fruit. Why the bill is so large and brightly colored is still unknown. As there is no sexual dimorphism in coloration, it is unlikely to be a sexual signal, and their diet does not require a bill that size. It has been theorized that the bill may intimidate smaller birds, so that the toucan may plunder nests undisturbed. Also, the beak allows the bird to reach deep into tree holes to access food unavailable to other birds, and also to demolish suspended nests built by smaller birds.

A toucan's tongue is long (up to 14-15 cm), narrow and singularly frayed on each side, adding to its sensitivity as an organ of taste. A structural complexity probably unique to toucans involves the modification of several tail vertebrae. The rear three vertebrae are fused and attached to the spine by a ball-and-

socket joint. Because of this, toucans may snap their tail forwards until it touches the head. This is the posture in which they sleep, often appearing simply as a ball of feathers, with the tip of the tail sticking out over the head.

Behavior

Toucans are primarily frugivorous (fruit-eating), but they will take prey such as insects and small lizards. Captive toucans have been reported to actively hunt insects in their cages, and it is possible to keep toucans on an insect-only diet. They also plunder nests of smaller birds, taking eggs and nestlings. This probably provides a crucial addition of protein to their diet. However, in their range, toucans are the dominant frugivores, and as such play an extremely important ecological role as vectors for seed dispersal of fruiting trees.

Toucans are arboreal and nest in natural cavities or holes excavated by woodpeckers in trees. The toucan bill has very limited use as an excavation tool. Toucans are resident breeders and do not migrate. Toucans are usually found in pairs or small flocks, within which bill fencing and wrestling may occur, probably to establish dominance hierarchies.

Systematic list

- **Genus Aulacorhynchus** - green toucanets (6-13 species, depending on taxonomy)
- **Genus Selenidera** - dichromatic toucanets (6 species)
- **Genus Andigena** - mountain toucans (4 species)
- **Genus Pteroglossus** - aracarís (14 species, incl. Saffron Toucanet)
- **Genus Ramphastos** - typical toucans (about 10 species)

Toucans in Fiction

- Toucan Sam, mascot of “Froot Loops” cereal.
- Tookie Tookie, George's pet Toucan from “George of the Jungle”.
- A humorous derivation of the name of the bird features in David McKee's children's book “Two Can Toucan”.
- Señor Tucán, the Spanish-speaking toucan from the American cartoon Dora the Explorer.
- Wulffmorgenthaler comic strip features a character named 'Toucan kid', who is an offspring of a human and a toucan.
- The character Lupe Toucan from “My Gym Partner's a Monkey”.
- The character Poco from the American cartoon Maya and Miguel.
- In The Legend of Zelda: The Wind Waker, the Wizzrobe, a magician-like monster that dates back to the first game for the NES, highly resembles a slightly anthropomorphic toucan, possessing the brightly colored beak, and wing-like sleeves on its robe.

Common Name: Crimson-rumped Toucanet
Scientific Name: *Aulacorhynchus haematopygus*

Size: 14 inches (35cm)

Habitat: South America. It is found in humid Andean forests in Ecuador, Colombia and Venezuela.

Status: Least Concern.

Global Population:
Unknown amount of mature individuals. The population trend appears to be stable.

Diet: Fruits and insects but will also eat lizards, eggs and nestlings of small birds. Toucans get most of the water they need from the fruits they eat.

Nesting: Sexes alike but males are slightly larger. The Crimson-rumped Toucanet's plumage is mostly green, frequently tinged blue. The rump and tail tip are maroon-red. The beak is black and maroon, with a white band at its base.



Mating season is typically March through July. A pair will 'bill-fence' as a courtship ritual; usually after nest preparations have finished. The nest is usually 2-30m above ground in an old woodpecker hole or crevice of tree. Three to four white eggs are laid. Incubation lasts about 16 days. Both parents incubate the eggs. Chicks hatch naked and blind. Chicks fledge after about 40 days. Parents will still feed them if the young return to the nest to roost, but by day 43 none will return.

Cool Facts: *Aulacorhynchus* species are considered the green toucanets, which suits this bird pretty well besides its blue-tinged breast and ruby-red rump. Seen in pairs or small flocks of eight or so. They are very active birds that cover great spans of territory while searching for food in the canopy to mid level of the forest.

Common Name: Golden-collared Toucanet
Scientific Name: *Selenidera reinwardtii*

Size: 12-14 inches (30.5-35cm)

Habitat: South America. It is found in the western Amazon in rainforests and forest edges.

Status: Least Concern. **Global Population:** Unknown amount, but numbers appears to be decreasing. Despite the fact that the population trend appears to

be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable under the population trend criterion.

Diet: Primarily fruits, but also insects and small vertebrates such as frogs and lizards.

Breeding: Males have a black crown,

throat and belly with an elongated yellow-orange marking behind the eye. Females are chestnut in color and lack the behind the eye marking.

Mating season spans from March-June. Nests are generally renovated natural cavities and abandoned woodpecker nests. 2-4 white eggs are laid. Parents share in incubation tasks which last about 16 days. Chicks are fed fruits and insects and fledging occurs around day 40.

Cool Facts: There are two sub-species which have very different bill coloring. The Green-billed Toucanet (*Selenidera reinwardtii langsдорffi*) looks similar to the nominate subspecies except it has a black bill with the base being a green-grey color.



Common Name: Saffron Toucanet
Scientific Name: *Pteroglossus bailloni*

Size: 14-16 inches (35-40 cm)

Habitat: South America. It occurs in south-east Brazil, east Paraguay and north-east Argentina. In Brazil, it is most common in montane regions (up to 1,550 m) of Espírito Santo and Minas Gerais to Rio Grande do Sul, but also occurs in Pernambuco, and has been re-introduced into ex-Guanabara, Rio de Janeiro. It is apparently less common in Argentina and Paraguay, while it is probably most numerous in south-east Paraguay. A recent survey of 24 forest fragments in the states of São Paulo, Rio de Janeiro and Mato Grosso do Sul, only found the species in the largest fragment (Paranapiacaba, 1,400 km²). Surveys showed that the

encounter rate at this site had declined by 47.5% between 1987-1991 and 1998, but in Argentina it remains locally fairly common. It is less conspicuous than other toucans in the same region, and may be more easily overlooked.

It occurs in lowland and montane Atlantic forests, generally on slopes and beside streams, and in Mantiqueira, Brazil it persists in second growth and forest remnants of c.3,000 ha.



Status: Near Threatened. **Global Population:** Unknown amount of mature individuals. A moderately rapid and on-going population decline is suspected owing to habitat loss, hunting and capture for the cage-bird trade. Montane forests have suffered less destruction than adjacent lowland forest in Brazil, but

isolated forests in the north of its range have been reduced by the expansion of pasture and cultivation, and fires spreading from cultivated areas. Cage-bird trade and hunting are apparently minimal in Argentina but it is still hunted in Paraguay.

Diet: Primarily fruits, but also insects and small vertebrates such as frogs and lizards.

Nesting: As suggested by its common name, it is, uniquely among toucans, overall saffron yellow. The back and tail are darker, more olive in color. The rump, ocular skin and patches on the basal half of the otherwise greenish-horn bill are red. The iris is pale yellowish.

They typically nest in trees with appropriate hollows, most of which are previously made by woodpeckers. Other hollows are the result of a branch break and ensuing rotting of the heart wood from rain over a period of time..

Both the male and female share the incubation and chick rearing duties. The eggs are incubated for about 16 days.

The newly hatched chicks are blind and naked with short bills and thick pads on their heels to protect them from the rough floor of the nest. Both parents, as well as their previous offspring and/or possibly other adults, feed the chicks. The young fledge after about 6 weeks. The adults continue to feed them for several weeks after fledging.

Cool Facts: This species' scientific name honors Louis Antoine François Baillon. The appearance of this toucanet is so distinctive that traditionally it was classified in the monotypic genus *Baillonius*. Recent phylogenetic analyses based on DNA sequence data, however, demonstrate that the Saffron Toucanet is a distinctively-plumaged species of aracari (*Pteroglossus*), and is most closely related to Green (*Pteroglossus viridis*) and Lettered aracaris (*Pteroglossus inscriptus*).

Common Name: Spot-billed Toucanet
Scientific Name: *Selenidera maculirostris*

Size: 14 inches (35 cm)

Habitat: South America. It is found in the Atlantic Forest of south-eastern Brazil - specifically in southern Bahia and eastern Minas Gerais south to Paraná and Santa Catarina; and possibly Rio Grande do Sul). They are also native to adjacent eastern Paraguay and the northeastern Argentinian province of Misiones. It inhabits forest, gallery forest and palm groves.



Status: Least Concern. **Global Population:** Unknown amount, but numbers appears to be decreasing. Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable under the population trend criterion.

Diet: Primarily fruits of the palms and of *Cecropia*, but also insects

and small vertebrates such as frogs and lizards.

They are usually seen in pairs, hopping around in dense vegetation as they search for food.

Nesting: Males have a black crown, throat and belly with an elongated yellow-brown markings behind the eye. Females are chestnut in color and lack the behind the eye marking.

Cool Facts: Except for the bill-pattern, it resembles the Gould's Toucanet, and the two have been considered conspecific in the past.

Common Name: Gould's Toucanet
Scientific Name: *Selenidera gouldii*

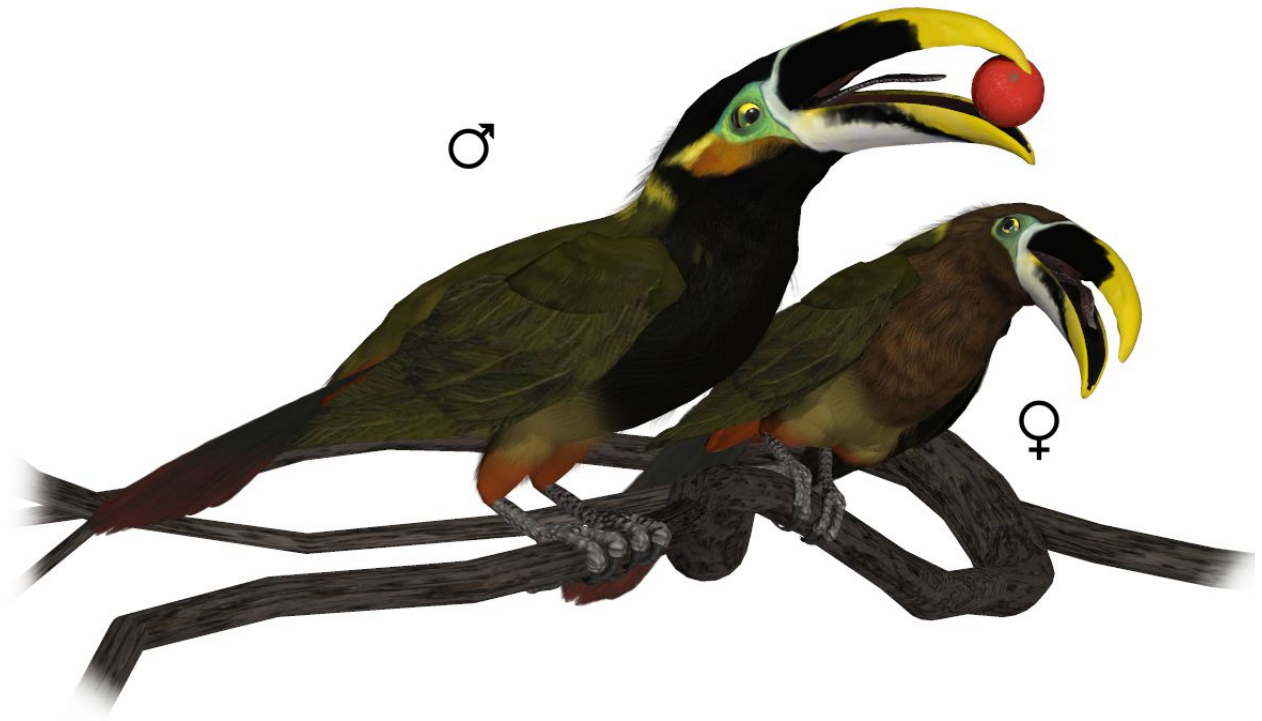
Size: 14 inches (35 cm)

Habitat: South America. The Gould's Toucanet is found south of the Amazon across Brazil to northeast Bolivia. A disjunct population exists in Serra de Baturité in the Brazilian state of Ceará (Caatinga).

They inhabit terra firme forest for the most part, but may visit seasonally flooded areas, second growth, and gallery forests within the northern Cerrado region.

Status: Least Concern. **Global Population:** Unknown amount, but numbers appears to be decreasing. Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable under the population trend criterion.

Diet: Fruit as well as insects, small vertebrates and eggs.



Nesting: The male Gould's Toucan's plumage below is black, as is his crown and nape. These areas are chestnut-colored in the female.

As part of the courtship display, the male Gould's Toucan flies skyward with his tail cocked, then drops down while uttering a series of frog-like croaks. This display is repeated several times for a few minutes. The pair may also throw fruit to one another.

Like all of their other activities, nesting happens high up in hollow areas in trees. The bill is not effective for digging or any other type of extensive excavation work and so they must rely on holes already formed by other means.

The nests are not lined, but the two to four shiny white eggs that are laid each year rest on a few wood chips created while enlarging the opening or on various kinds of regurgitated seeds collected for this purpose. Parents share equally in incubation duties, but rarely sit on the nest for more than an hour at a time and the eggs are often left uncovered. Both parents share in feeding fruit to the babies for up to 8 weeks.

After 16 days the nestlings are born blind, with no trace of down on their pink skin. The bill is unremarkable until about 16 days old when it takes on the distinguishing features of the toucan, and requires up to four months to develop fully. Feathers begin to expand at 4 weeks.

Babies have pads on their elbows that protect their feet by keeping them elevated until they fledge.

Breeding in captivity requires attention to a number of details. Even successful breeders report rates as low as 30% for the incubation of eggs.

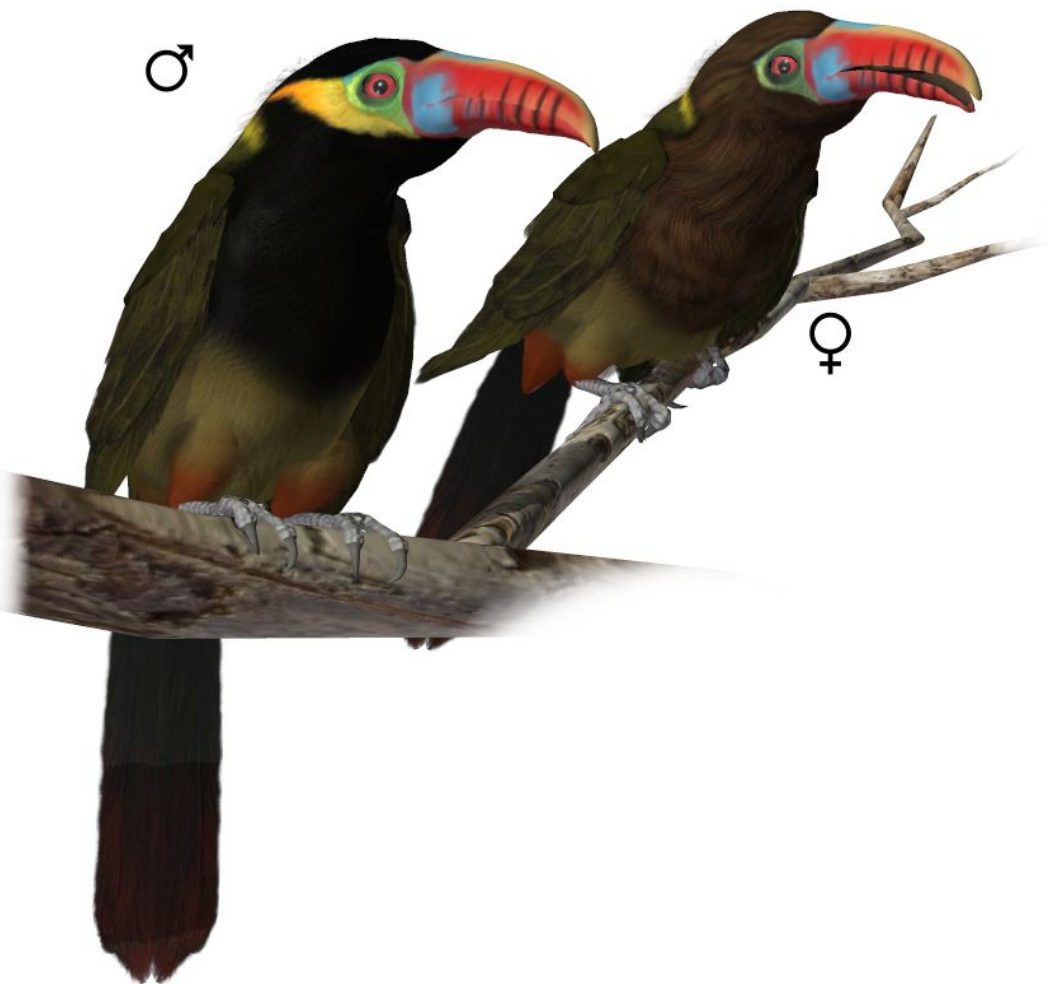
Cool Facts: The Gould's Toucanet resembles the Spot-billed Toucanet, except for the bill-pattern. Its vocalizations are described as slow-paced, grunting calls.

Common Name: Tawny-tufted Toucanet
Scientific Name: *Selenidera nattereri*

Size: 14 inches (35 cm)

Habitat: South America. The Tawny-tufted Toucanets occur naturally in extreme eastern Colombia (in the Vaupés River region) and southern Venezuela to northwestern Brazil (along the Solimões River - from Tonantins to Codajás, and north to the upper Negro River region). There are unconfirmed reports from Guyana and French Guiana.

Their distribution is patchy and concentrated along rivers.



Status: Least Concern. **Global Population:** Population size has not been quantified but this species' population appears to be in decline. Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable.

Diet: Fruits, insects, tree frogs and lizards.

Nesting: Males are largely black below and over the head, and green above, with red-and-yellow thighs, a red-tipped dark tail, a multicolored bill, and tawny-yellow ear-tufts. Females are broadly similar, but the black of the head and underparts is replaced by rusty-rufous.

As part of their mating ritual, they throw fruit to one another. Like all of their other activities, nesting happens high up in hollow areas in trees. The bill is not effective for digging or any other type of extensive excavation work and so they must rely on holes already formed by other means.

The nests are not lined, but the two to four shiny white eggs that are laid each year rest on a few wood chips created while enlarging the opening or on various kinds of regurgitated seeds collected for this purpose. Parents share equally in incubation duties, but rarely sit on the nest for more than an hour at a time and the eggs are often left uncovered. Both parents share in feeding fruit to the babies for up to 8 weeks.

After 16 days the nestlings are born blind, with no trace of down on their pink skin. The bill is unremarkable until about 16 days old when it takes on the distinguishing features of the toucan, and requires up to four months to develop fully. Feathers begin to expand at 4 weeks.

Babies have pads on their elbows that protect their feet by keeping them elevated until they fledge.

Cool Facts: Also known as “Natterer's Toucanets”, Tawny-tufted Toucanets are fairly long-lived with a lifespan around 20 years.

Common Name: Green Aracari
Scientific Name: *Pteroglossus viridis*

Size: 12-16 inches (30-40 cm)

Habitat: South America. Found in northeastern South America (the Guiana Shield), in the northeast Amazon Basin, the Guianas and the eastern Orinoco River drainage of Venezuela. It is found in the lowland forests.

Status: Least Concern. **Global Population:** Population size has not been quantified but this species' population appears to be in decline. Despite the fact

that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable.



Diet: Mostly fruit, including the fruits of Cecropia trees and the palm (*Oenocarpus bacaba*). The serrated edges of the Green Aracari's large bill help the bird to grip and gather fruit. Insects are an occasional part of the diet, giving the birds protein.

Nesting: The species is named for the green feathers covering its back. Males' crowns are black, while females' are reddish-brown.

Breeding occurs from February to June. It nests in tree cavities, producing 2–4 white eggs. The parents cooperate in rearing their young.

Cool Facts: It is the smallest aracari in its range and among the smallest members of the toucan family.

Common Name: Chestnut-eared Aracari
Scientific Name: *Pteroglossus castanotis*

Size: 17–18 ½ inches (43-47 cm)

Habitat: South America. The range of the Chestnut-eared Aracari is the southern Amazon Basin, especially the southwestern part of this region. It is also found in the eastern Andean foothills; a narrowing range extension which enters central-southern Colombia by 900 kilometers.

The southern Amazon Basin range narrows in the southeast to only the upstream half-headwaters of the north-flowing Amazon River tributaries. This range continues southeastwards into the central and southern cerrado and ends in the Paraná River region in eastern Paraguay, southeastern Brazil and the extreme northeast of Argentina.

Status: Least Concern. **Global**

Population: Population size has not been quantified but this species' population appears to be in decline. Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable.

Diet: Fruits, insects, frogs, lizards and bird eggs. Fruits are

taken from the branch, sometimes by hanging upside-down. It searches for food in bark crevices and all cavities in trees. The Chestnut-eared Araçari forages usually in the lower canopy and understory, shrubs and trees. These birds usually stay well away from the larger toucans, because a hierarchy by size is often established at food sources.



Nesting: Males have black crowns whereas females are more rufous in color. Male beaks are also slightly longer. It is an attractively patterned species with a large yellow and black bill, a pale eye surrounded by blue facial skin, dark upper-parts, and a yellow belly divided by a red band.

The breeding season varies according to the range. They often nest with other pairs in groups, of up to 10-12 birds. The nests are often placed in old woodpecker holes. This cavity is probably enlarged by excavating, thanks to the large bill.

The female lays 2-4 white eggs. The incubation lasts about two weeks, mainly by the female, but the male may help when she goes out to feed. Both parents feed the chicks. The young fledge one month after hatching and form a family group with the adults.

Cool Facts: Ischnoceran lice found on the Chestnut-eared Aracari were first described as *Austrophilopterus cancellosus castanotus*, but these parasites are actually indistinguishable from those on most other *Pteroglossus*, and today united with them in *Austrophilopterus flavirostris*.

It has the widest distribution of any aracari species and is one of the most common of the toucans.

Common Name: Ivory-billed Aracari
Scientific Name: *Pteroglossus azara*

Size: 13-14 inches (33-35.5 cm)

Habitat: South America. It is found in Bolivia, Brazil, Colombia, Ecuador, Peru, and Venezuela. Its natural habitat is subtropical or tropical moist lowland forests.

Status: Least Concern.

Global Population:

Population size has not been quantified but this species' population appears to be in decline. Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable.

Diet: Fruits, insects, frogs, lizards and bird eggs

Nesting: The Ivory Bill is one of the few dimorphic species of toucans. Males have black crowns whereas females are more rufous in color. Male beaks are also slightly longer.

All Ramphastids lay pure white, elliptical shaped eggs, usually 3-4 per clutch. Incubation for all species lasts 16 days, and young fledge the nest at 40-42 days.

Cool Facts: The Ivory Bill consists of three subspecies (*P. a. azara*, *P. a. flavirostris*, *P. a. mariae*).



Common Name: Curl-crested Aracari
Scientific Name: *Pteroglossus beauharnaesii*

Size: 16-18 inches (40-45 cm)

Habitat: South America; Peru, Bolivia and Brazil. It is found in the southwestern section of the Amazon Basin, with the Amazon River being its northern range



limit. Near the Amazon River, its range extends east to about the Madeira River, while the southern half of its range extends east to around the Xingu River. It is overall rare to uncommon, but regularly seen at several localities, including the Tambopata-Candamo reserve in Peru, the Noel Kempff Mercado National Park in Bolivia, and the Cristalino State Park near Alta Floresta in Brazil.

Its natural habitat is tropical moist lowland forests, forest edges and clearings where it feeds mainly on fruit.

Status: Least Concern. **Global Population:** The population size has not been quantified, but is believed to be declining. Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable.

Diet: Fruits, insects, frogs, lizards, bird eggs and nestlings. They seem particularly fond of attacking Yellow-rumped Cacique (*Cacicus cela*) nests.

Nesting: Males slightly larger than females. The most significant feature is the curled feathers on the crown of the head, but they also have a relatively short bill and relatively long tail. Upperparts are dark green with dark red mantle and rump. The pale throat leads to a yellow breast with increasing blotches of red to a band of red and black, with a yellow belly. The bare skin round the eye is light blue while the bill is spectacular with an orangey tip, blue and maroon on the maxilla and an ivory mandible.

It nests in tree cavities; high in the canopy. The entrance hole is preferred to be only large enough for a bird to fit through. This cavity may also be used for several years. Bill fencing is thought to be a courtship ritual. Two to four, white eggs are laid. Both parents share in the incubation which lasts 16-20 days. The chicks hatch blind and naked and have specialized heel pads that protect the chicks against the rough texture of the cavity floor. The young are cared for by both parents and fledge at around 6-10 weeks. Additional clutches may follow.

Cool Facts: Aracarís generally roost socially throughout the year. Up to five adults and their fledged offspring sleep in the same hole with their long tails folded over their backs.

Common Name: Red-necked Aracari
Scientific Name: *Pteroglossus bitorquatus*

Size: 14 inches (36 cm)

Habitat: South America. It occurs in east-central South America, restricted to the area south of the Amazon. Subspecies *sturmii* has a distribution bounded by Rio Madeira and Rio Tapajós, Brazil, to the west and east respectively, and ranges south as far as the states of Rondônia and Mato Grosso. It reaches Bolivia, where it is present in Noel Kempff Mercado National Park. Subspecies *reichenowi* occurs in Brazil between Rio Tapajós and Rio Tocantins, south as far

as north Mato Grosso. The nominate subspecies *bitorquatus* is also limited to Brazil, with a range encompassing Marajó Island and the area between Rio Tocantins in the west, and Maranhão in the east.

This species inhabits moist tropical forest, gallery forest and some "cerrado" (dry savanna woodland) up to c.550 m, and appears to show some tolerance of secondary habitat.

Status: Near Threatened. **Global Population:** The global population size has not been quantified, but this species is described as 'fairly common'.



Although the species shows some tolerance of habitat fragmentation and degradation, the extent of projected deforestation in its known range is sufficient to pose a threat.

Proposed changes to the Brazilian Forest Code reduce the percentage of land a private landowner is legally required to maintain as forest (including, critically, a reduction in the width of forest buffers alongside perennial streams) and include an amnesty for landowners who deforested before July 2008 (who would subsequently be absolved of the need to reforest illegally cleared land). This species is suspected to lose 35.4-47% of suitable habitat within its distribution over three generations (21 years) based on a model of Amazonian deforestation (Soares-Filho et al. 2006, Bird et al. 2011).

Diet: Fruits, insects, frogs, lizards and bird eggs.

Nesting: Both sexes are basically alike but female has little to no black at the rear of the throat; crown more brown, less black or none; yellow band on breast narrower; bill shorter. Immature birds are browner overall and lack vivid coloration. This species has a relatively long tail.

Cool Facts: Despite the obvious plumage similarities between this species and the Ivory-billed Aracari (*Pteroglossus azara*), the Red-necked Aracari is speculated to be more closely related to the Green Aracari (*Pteroglossus viridis*) and the Lettered Aracari (*Pteroglossus inscriptus*).

Common Name: Gray-breasted Mountain Toucan
Scientific Name: *Andigena hypoglauca*

Size: 18 - 19 inches (46-48 cm)

Habitat: South America; Columbia, Ecuador and Peru. They are found primarily on the east slope of the Andes, from Nariño, south Colombia, through Ecuador south to Cuzco, south-east Peru. On the west slope of the Andes it occurs in Caldas and Cauca, Colombia, and Azuay and Loja, south-west Ecuador



They are found in humid highland forest, often spending much of their time in the tallest trees.

Status: Near Threatened. **Global Population:** unknown. A moderately rapid and on-going population decline is suspected owing to habitat loss. Its habitat in Colombia has been subject to widespread and severe deforestation over a prolonged period as a result of agricultural expansion, whereas the east Andes of Ecuador and north Peru are under intense pressure from conversion for agriculture and cattle pasture, mining operations and

logging. In Peru, there is an alarmingly high rate of deforestation in the north Cordillera de Colán for the cultivation of cash crops, and widespread forest loss on montane slopes in the Marañón drainage. Montane forests in south-east Peru are perhaps the most intact within its range, but even these have been locally affected by domestic grazing animals, burning, cutting for fuel and clearance for cultivation

Diet: Fruits and berries. A wide variety of fruits and berries are eaten and this species is often more willing than most largish toucans to leave the canopy to eat raspberries near the base of the trees. They tend to remain quiet while flying and are also known to mix often with other birds while foraging, including larger species of tanagers, thrushes and icterids. Both of these behaviors are unusual in toucans.

Nesting: Males slightly larger than females. This species is distinguished from other mountain-toucans by its colorful bill: red and black at the tip and yellow-green at the base, where there is a black, thumbprint-shaped mark. The black head is set off from the chestnut-brown back by a pale gray collar.

The behavior has not been well studied, so little is known about their breeding habits.

Cool Facts: This is one of four species of mountain toucan. It occurs in several protected areas, including Las Cajas National Recreation Area and Podocarpus National Park, Ecuador.

Common Name: Hooded Mountain-Toucan
Scientific Name: *Andigena cucullata*

Size: 22 - 26 inches (55-65 cm)

Habitat: South America; Bolivia and Peru. It is found in humid epiphyte-laden cloud forests on the east side of the high Andes of Bolivia and far southern Peru.



Status: Least Concern.

Global Population:
Unknown mature individuals.
The population trend
appears to be stable.

Diet: Fruits, insects, frogs,
lizards and bird eggs.

Nesting: Males slightly
larger than females. It has a
long, greenish yellow bill
that is black tipped with an
oval black spot near the
base of the lower bill. The
head is dark blue in color,
except for the bare skin
around the eyes and thin
blue partial collar on the
nape.

The back is rich chestnut
fading to green and yellow.
The plumage below is a
darker green to black with a
chestnut vent.

It nests in tree cavities; high
in the canopy. The entrance

hole is preferred to be only large enough for a bird to fit through. This cavity may also be used for several years. Bill fencing is thought to be a courtship ritual as is fruit-throwing to one another. Two to four, white eggs are laid. Both parents share in the incubation which lasts 16-20 days. The chicks hatch blind and naked and have specialized heel pads that protect the chicks against the rough texture of the cavity floor. The young are cared for by both parents and fledge at around 6-10 weeks. Additional clutches may follow.

Cool Facts: Mountain Toucans are extremely shy birds.

Common Name: Choco Toucan
Scientific Name: *Ramphastos brevis*

Size: 21 ½ inches (54 cm)

Habitat: South America; found in the Pacific lowlands and lower foothills of southwest Colombia and northwest Ecuador.

Status: Least Concern. **Global Population:** The population size has not been quantified, but is believed to be declining. Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable.

Diet: Fruits, insects, frogs, lizards and bird eggs.

Nesting: Its very striking plumage includes black upper-parts, a bright yellow throat and breast, a white rump, and red undertail coverts. The bill is black with a bright yellow culmen. It overlaps almost completely with the nearly identical Chestnut-mandibled Toucan (*Ramphastos swainsoni*), and is best separated by its slightly smaller size, its black, as opposed to “chestnut” lower mandible, and most-importantly voice.

Cool Facts: Like other

members of the genus *Ramphastos*, they move in small groups of 2-5 individuals, and nest in large cavities. They are generally found in intact forest, but also frequent forest edge situations. Often they are found foraging in fruiting trees. Males work their way to the tops of large trees, with emergent dead branches, where they swish their heads back and forth while calling.

Common Name: Green-billed or Red-breasted Toucan

Scientific Name: *Ramphastos dicolorus*

Size: 16 - 18 inches (40-46 cm)

Habitat: South America. Found in southern and eastern Brazil, eastern Paraguay and far north-eastern Argentina. It is primarily found in montane Atlantic Forests.



Status: Least Concern. **Global**

Population: Population size has not been quantified but this species' population appears to be in decline. Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable.

Diet: Fruits, insects, frogs, lizards and bird eggs.

Nesting: Its beak is one of the shortest of *Ramphastos*

toucans at only about 10 cm (4 in) in length. It is mostly pale greenish-horn, leading to its common name. The breast is actually orange, with yellow at the sides.

Cool Facts: It is also known as the Red-breasted Toucan. It is one of the smallest species of *Ramphastos* toucans, weighing 265-400 grams.

Common Name: Red-billed or White-throated Toucan
Scientific Name: *Ramphastos tucanus*

Size: 20 - 24 inches (50-61 cm)

Habitat: South America. Found throughout the Amazon in south-eastern Colombia, eastern Ecuador, eastern Peru, northern Bolivia, southern and eastern

Venezuela, northern and western Brazil, including the Amazon Basin's adjacent Tocantins-Araguaia River drainage, and the Guianas.

It prefers tropical humid forest, but also occurs in woodland and locally in riverine forest within the Cerrado.

Status: Least Concern. **Global**

Population: Population size has not been quantified but this species' population appears to be in decline.

Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable.



Diet: Primarily an arboreal fruit-eater, but will also take insects, lizards, eggs, and other small vertebrate prey. Small flocks or more commonly pairs of birds move through the forest with a heavy, rather weak, undulating flight, rarely flying more than 100 m (330 ft) at a time.

Nesting: It has black plumage with a white throat and breast bordered below with a narrow red line. The rump is bright yellow and the crissum is red. The bare skin around the eye is blue. The bill has a yellow tip, upper ridge and base of the upper mandible, and the base of the lower mandible is blue. The rest of the bill is mainly black in *R. t. cuvieri* and mainly reddish-brown in *R. t. tucanus*, with intergrades showing a mixed coloration. Males are larger and longer-billed than females, but otherwise the sexes are alike.

Juveniles are noticeably shorter-billed, more sooty-black, and have duller plumage.

The 2–4 white eggs are laid in an unlined cavity high in a decayed section of a living tree, or in an old woodpecker nest in a dead tree.

Both sexes incubate the eggs for at 14–15 days, and the toucan chicks remain in the nest after hatching. They are blind and naked at birth, with short bills, and have specialized pads on their heels to protect them from the rough floor of the nest. They are fed by both parents, and fledge after about 6 weeks. The parents continue feeding the juveniles for several weeks after they have left the nest.

Cool Facts: It was formerly considered to be two species, with the southern and western nominate subspecies, *R. t. tucanus*, named the Red-billed Toucan, and the northern and eastern subspecies, *R. t. cuvieri*, Cuvier's Toucan (when considered a species; *R. cuvieri*, Wagler, 1827). However, the two subspecies, which differ principally in the bill color, interbreed freely wherever they meet and therefore merit only subspecies status. The subspecies *R. t. inca* from Bolivia is of questionable validity and may represent a stable hybrid population between *tucanus* and *culminatus*.

The distribution of the White-throated Toucan completely overlaps that of a smaller species of toucan, the Channel-billed Toucan (*Ramphastos vitellinus*). In eastern Amazonia, these two species differ in the color of the breast and of the bill, but in western Amazonia the color patterns of the two species are almost identical. The smaller species is a member of the "croaking" group of toucans, with very different, frog-like vocalizations, and has a relatively smaller bill.

Special Thanks to...

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Species Accuracy and Reference Materials

Many birds of the same species do vary considerably in color. This package tries to emulate the colors and markings in the most commonly found variants.

The author-artist has tried to make these species as accurate to their real life counterparts as possible. With the use of one generic model to create dozens of unique bird species, some give and take is bound to occur. The texture maps were created in Painter with as much accuracy as possible. Photographic references from photographs from various Internet searches and several field guides were used.



Field Guide Sources:

- **“A Guide to the Birds of Mexico and Northern Central America”** by Steve N. G. Howell and Sophie Webb
- **“Birds of South America. Non-Passerines: Rheas to Woodpeckers”** by Francisco Erize, Jorge R. Rodriguez Mata and Maurice Rumboll
- **“Birds of Peru”** by Thomas S. Schulenberg, Douglas F. Stotz, Antonio Brack Egg, Daniel F. Lane, John P O'Neill, Theodore A. Parker, III
- **Wikipedia** (<http://www.wikipedia.com>)
- **Avian Web** (<http://www.avianweb.com>)
- **Neotropical Birds** (<http://neotropical.birds.cornell.edu>)
- **Bird Life International** *Used for the most of the global population counts*

Songbird ReMix Merchandise



www.empken.com/store